AMERICAN STANDARD PLUMBING & HEATING DIVISION

CONSTRUCTION OF A LAVATORY BLOCK MOLD FROM PLASTER MODEL

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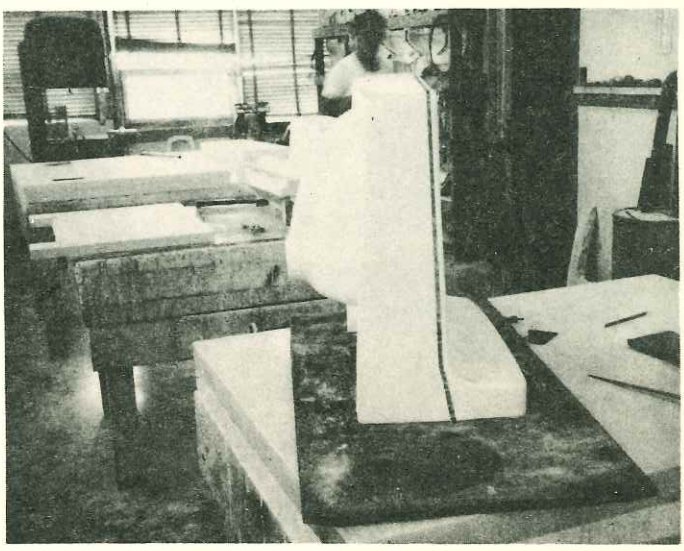
CONSTRUCTION OF A LAVATORY BLOCK MOLD FROM PLASTER MODEL

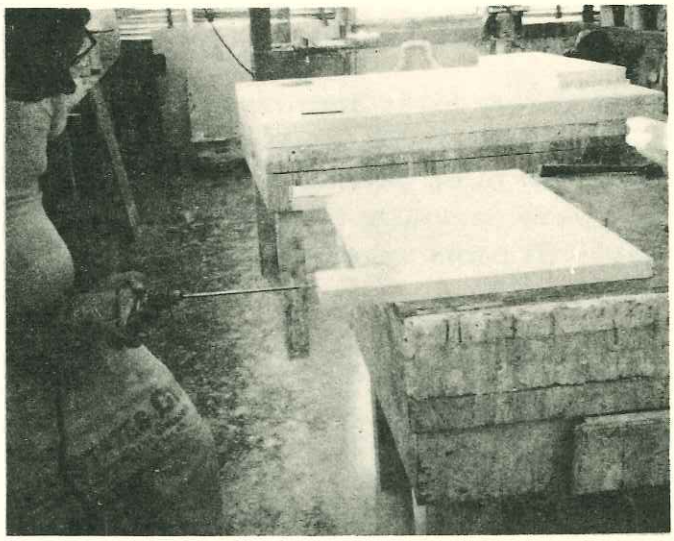
When the model is approved for blocking, the first step in the construction is to locate the mold parting line. This is done very carefully to assure that the mold will come apart without chipping (photo #1).

The model is set up in a level position and a straight edge is set across its top. A square is set on top of the straight edge and along the side you can then see where the square comes in contact with the model. A small pencil line is put at this point. This is done a number of times along the sides and front.

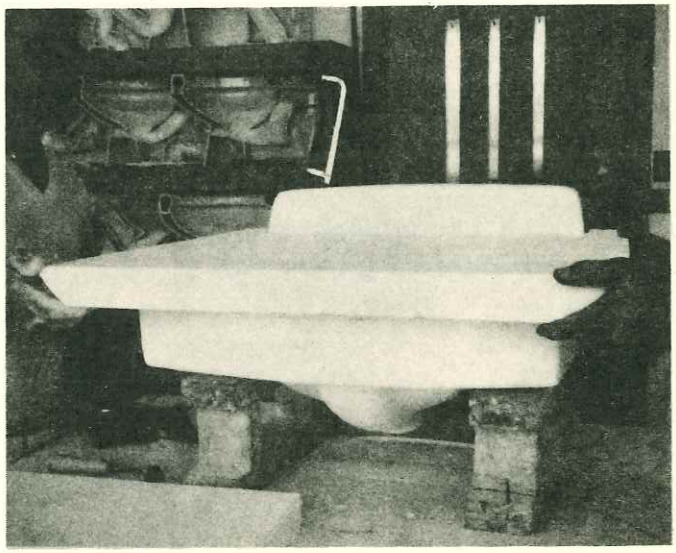
These lines are connected and the parting line is established (photo #2).

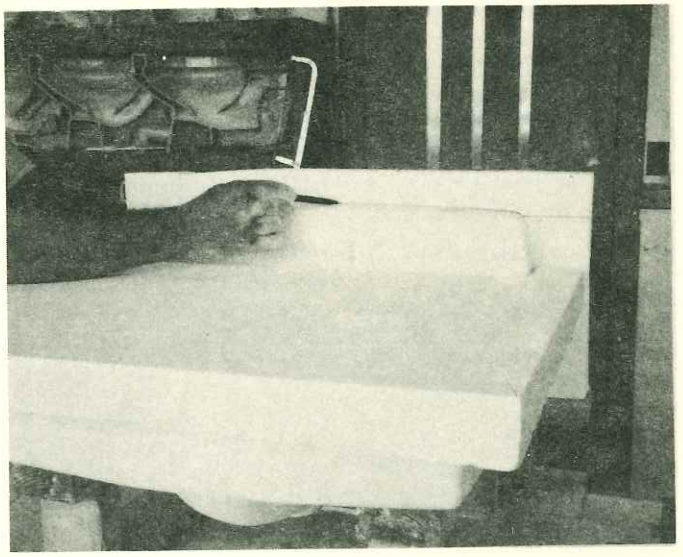


The second step is to pour a plaster slab which will be large enough to establish the outside mold size (photo #3).

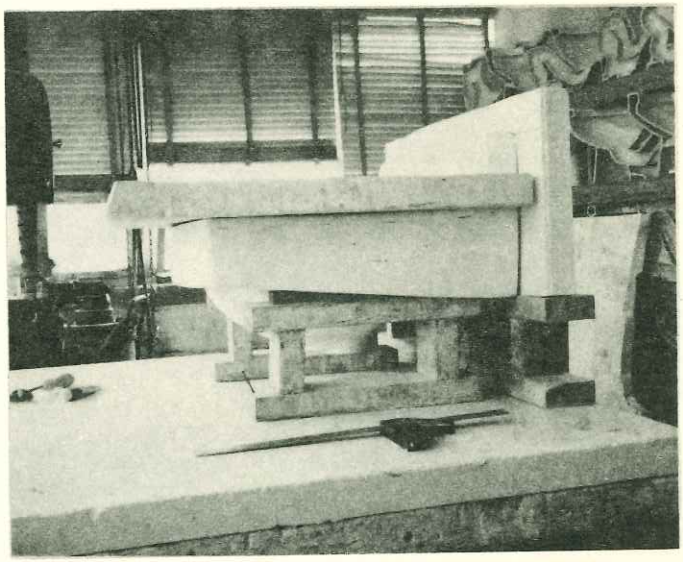


This would be roughly 3" larger than the model all around and at least $1\frac{1}{2}$" thick. A center line is drawn on the slab and lined up with the center of the model. A notch is cut out of one end to allow the slab to extend to the model back (photo #4).



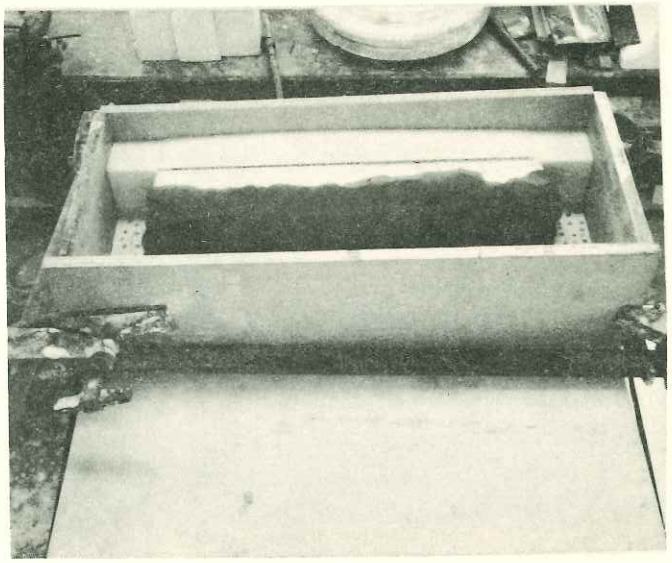


Another slab is poured. This slab is to determine the thickness of the mold back. Care should be taken to make it the correct thickness as it will be used to make the back parting line. This slab is shaped to conform to the top back of the model (photo #5).

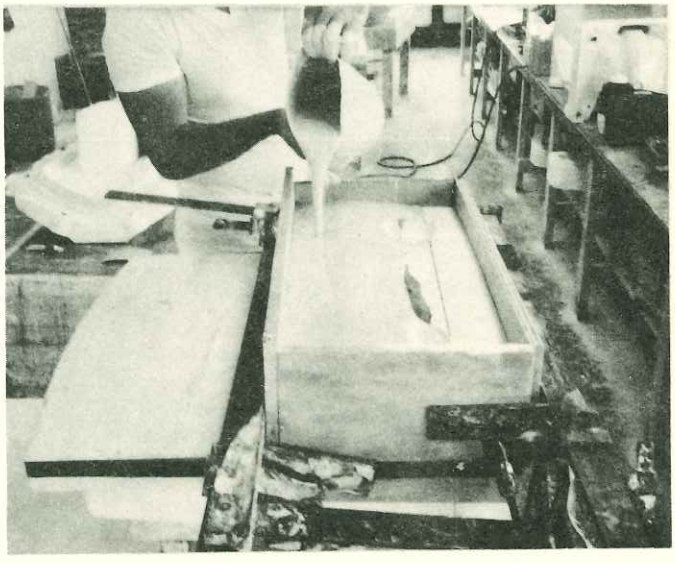


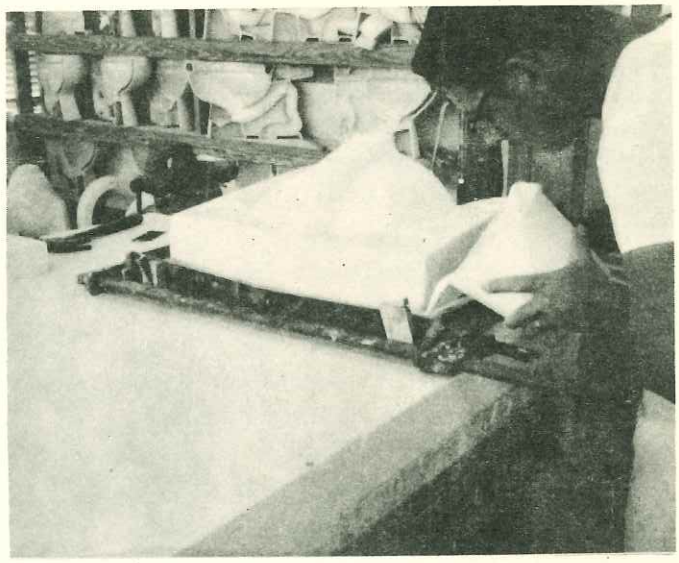
Both slabs are then cut to the size of the outside mold dimensions. If the mold thickness is to be $2\frac{1}{4}$" at the parting lines, these slabs will be $2\frac{1}{4}$" larger than the model all around. Set the model up so that it is in the installed position. Place the first slab on the model so that the notched out section goes to the back. The second slab is clamped to the first so that the surface, which conforms to the model back, lines up perfectly (photo #6 and photo #7).

The first set is undercut so as to hold this set in place. Only undercut the first set. This set will form the back mold parting line (photo #7).



Now that both sets are lined up and clamped securely, a plaster set is poured on top (photo #8).

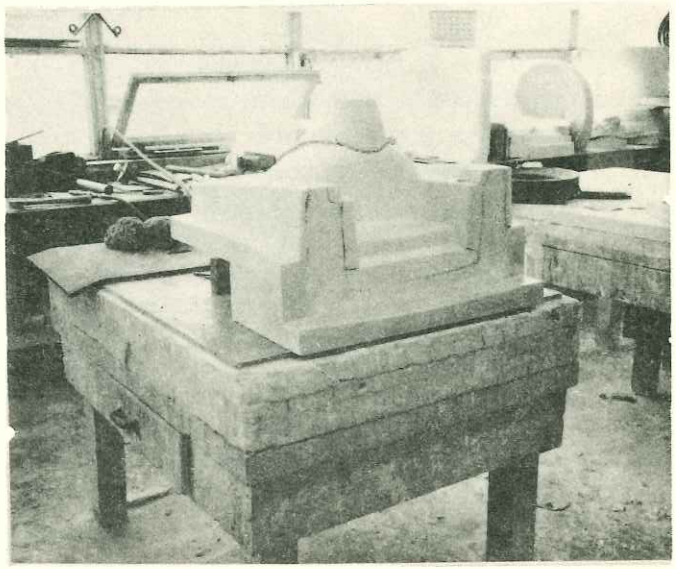




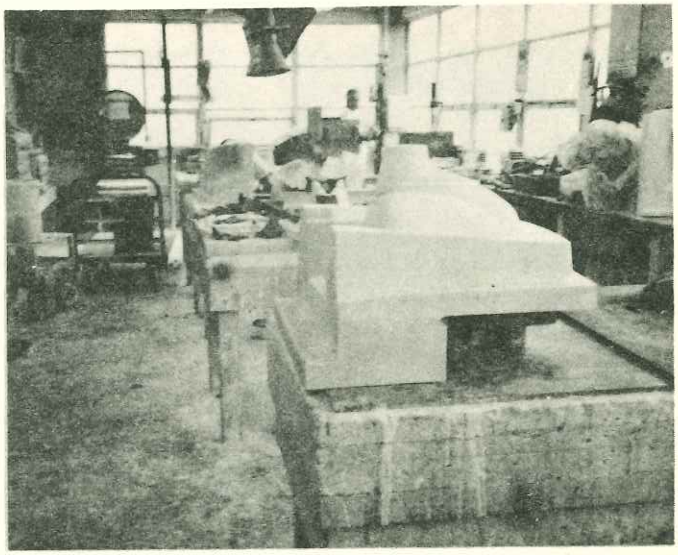
Turn the model and both sets over. Make sure none of the pieces slip out of place. The model is now sitting on the first slab and the back slab is sitting on the set which is connected to the first by the undercut. The side and front parting lines which were laid out earlier can now be seen. Undercut the first set along the sides and front of the lavatory to hold the next set in place. Pour a plaster set on this slab up to the parting line (photo #9).

This plaster mix can be 50-50 (half water - half plaster) to make shaping easier. When this set is complete all parting lines on the lavatory model are located. By removing the second set (back set) the back parting line is in place (photo #10).

The first mold part is now ready to be blocked. If the piece is to be made with a seat setter, the setter should be blocked at this time. If the piece is to take a face setter, the seat should be blocked. Now we will block the seat setter. There are areas of the setter that have to be relieved for ware clearance (photo #11).



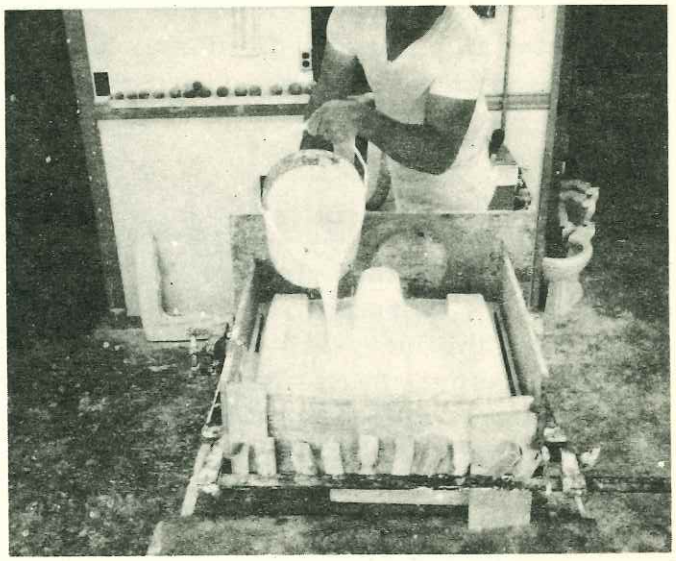
Clearance may be necessary to avoid support at certain critical areas and to allow for ware shrinkage. The first to be given clearance is the sides and front. A plaster set 3/4" thick is poured around these sections. They are given proper draw for mold removal. The overflow and outlet need clearance. A set 1/2" thick is poured around the overflow and 1" thick around the outlet. Clearance at the outlet bottom is optional. It may or may not be supported by the setter at first. The section on the sides of the fitting shelf will need clearance because of shrinkage--so a set 3/4" thick is made there. If the lavatory has shoes, sets will have to be made there for clearance.



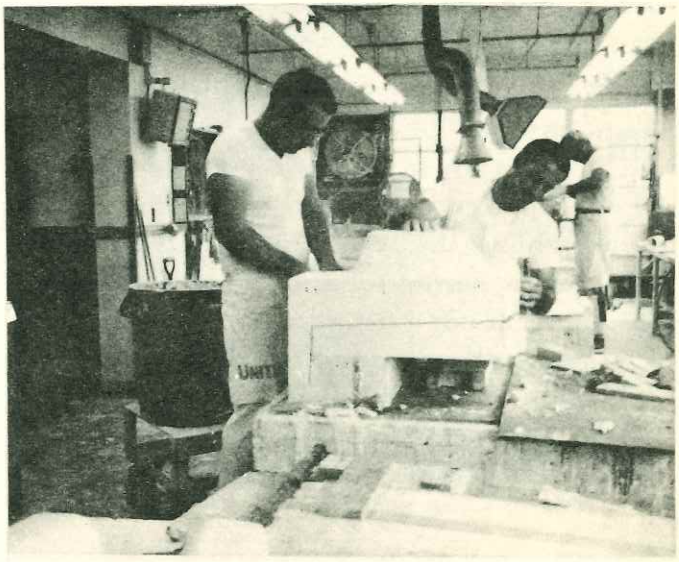
When all of the sets are complete and in place, the setter can be blocked (photo #12).

This is simply done by coddling up against the outer edges of the first sets that established the mold size (photo #13).

The bottom size is established by the size bench or other methods of holding dictates. Iron reinforcing rods may be added as desired.

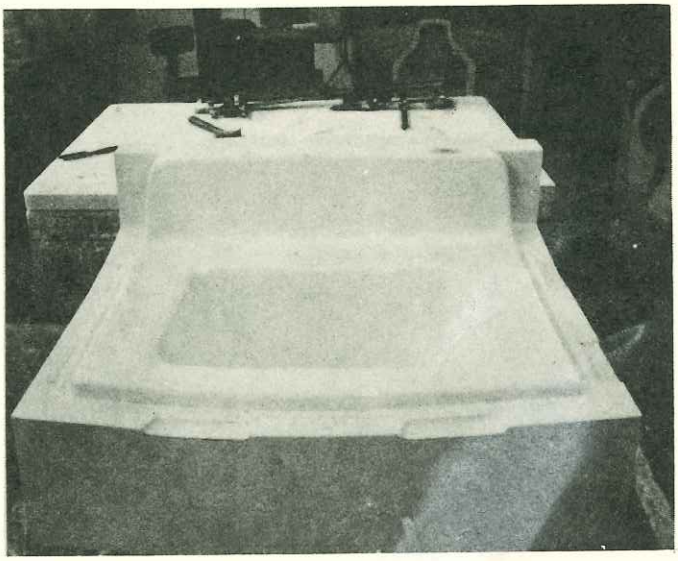


Plaster is poured over the prepared model and shaped by hand (photo #14).

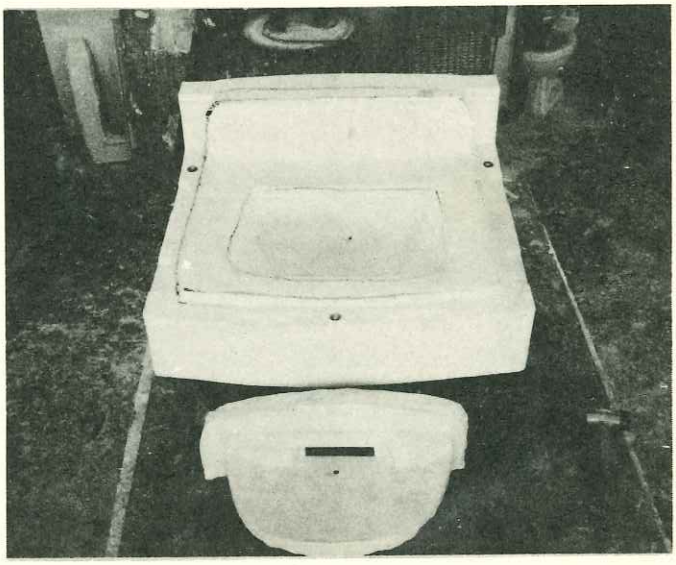


When the setter is complete, the model with setter in place is rolled over to block the next part. If the lavatory has a splash rim, the loose lump is next. If not, the core is next.

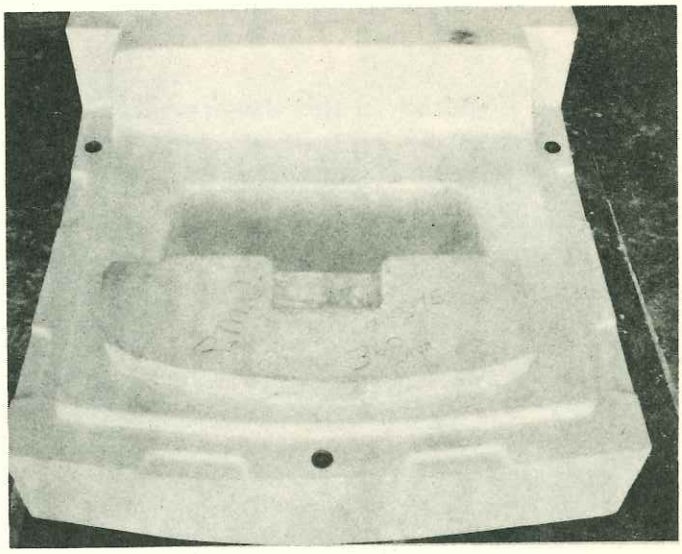
The model is now sitting in the seat setter with the first sets up. These sets will now be removed to allow the blocking of the lump and core. Very carefully insert sharp thin wedges between the sets and the setter and pry up. The sets will lift up easily. Be careful not to drop any parts of the sets on the model. These sets can be discarded (photo #15).



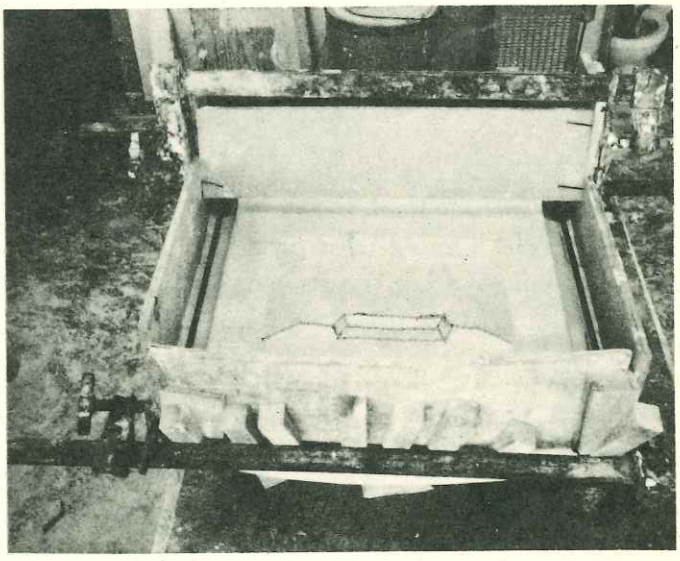
To block the loose lump, its size and shape have to be determined. This will vary from lavatory to lavatory. A set is poured on the section of the model where the loose lump will be. This set is removed and made into the shape needed along with key ways or other methods used to properly locate the lump (photo #16).



When this shape is complete, it is placed back into the lavatory basin and another set is poured over it (photo #17).

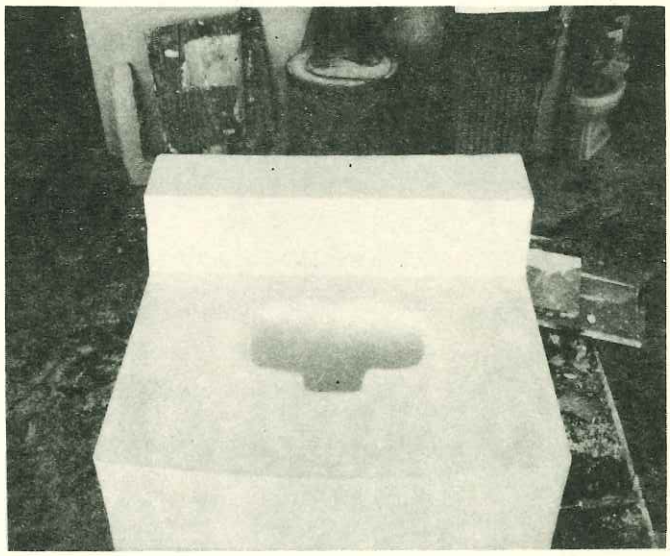


The set is then removed and a pouring hole is cut into it. The set that is the shape of the lump is removed and the set which was poured on it is put back in place. This leaves a space which will be filled with plaster and becomes the lavatory lump. With the lump poured, the set which formed it is removed and discarded (photo #18).

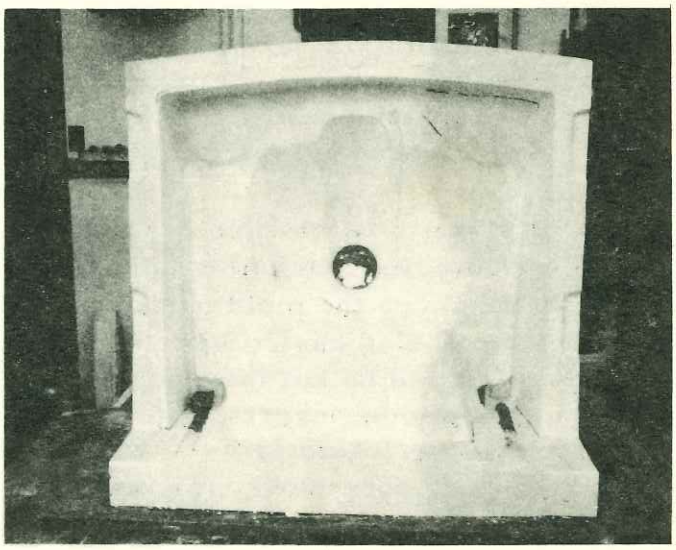


The next piece to be blocked is the core. On the parting line notchettes have to be located to keep the mold parts from shifting when being cast. Some of the notchettes should be cut into the mold and some should be inserts, either brass or plastic (photo #17). To setup for pouring the core block it is just a matter of coddling up around the setter mold. Iron reinforcing rods may be added as desired (photo #18).

Mark the coddles to the desired mold thickness and pour plaster to the lines scraping excess plaster off. Plaster is dug out in the basin area to give the core mold a workable thickness (photo #19). The final thickness will be complete just before casing the mold.

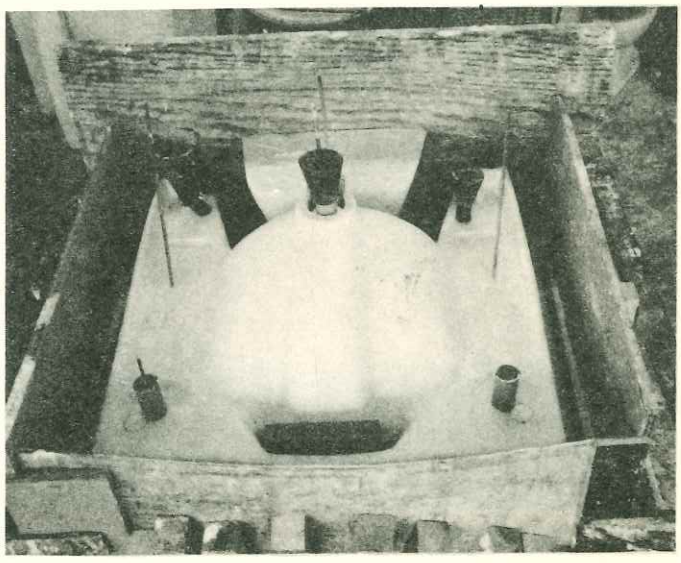


Next to be blocked will be the seat mold. Turn the mold over so as to put the core mold on the bottom. Remove the setter mold (photo #20).

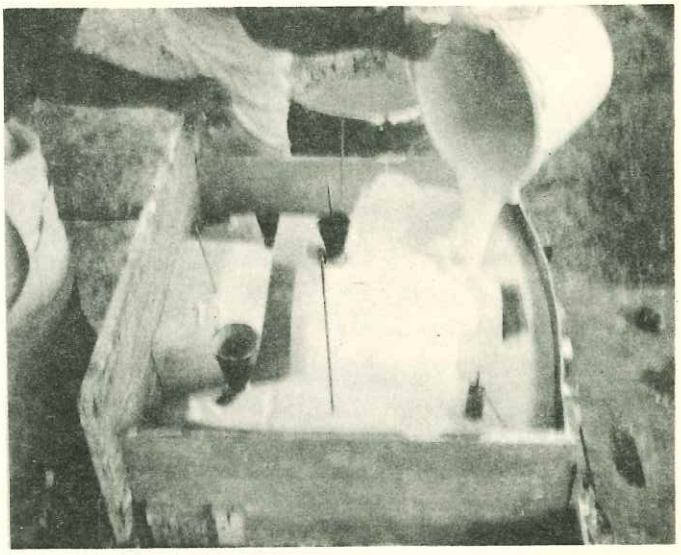


Use sharp wedges or stiff putty knives to pry apart. These are driven into the mold parting line. Care should be taken not to drive them into any notchettes which are on the parting line. When the setter is removed all of the sets used to block the setter are also removed (photo #21). The complete bottom side of the model is now exposed. Openings may be cut in setter at rear of shoes and around outlet as desired to facilitate uniform drying of ware in setter.

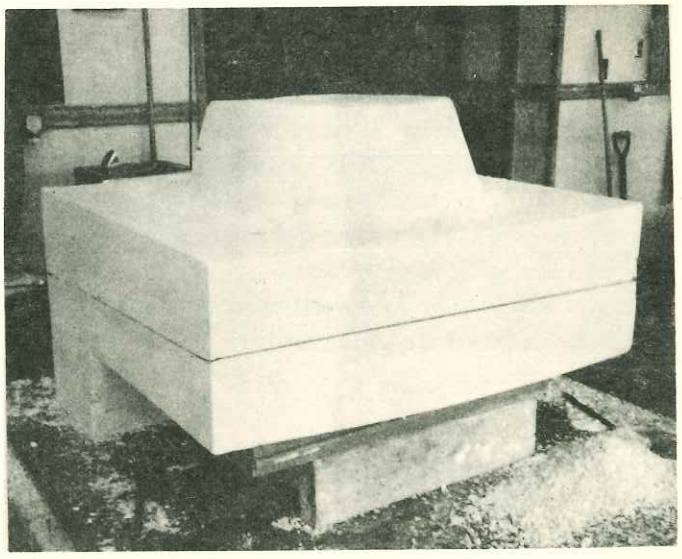
Decide what size tubing will be used to pour and drain the piece and locate them along with funnels or other aids used in pouring. These tubes and locations will vary from shop to shop (photo #22). Iron reinforcing rods may be added as desired.



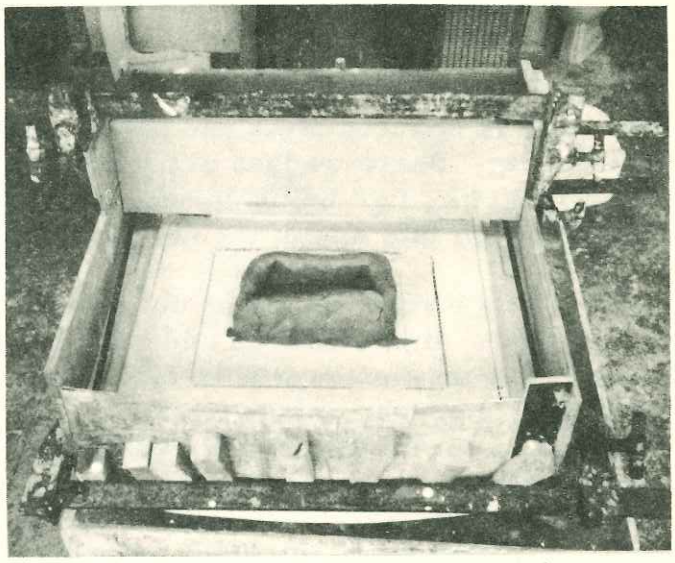
Lines can be laid out on the coddles to establish mold thickness and the plaster poured to these lines (photo #23).



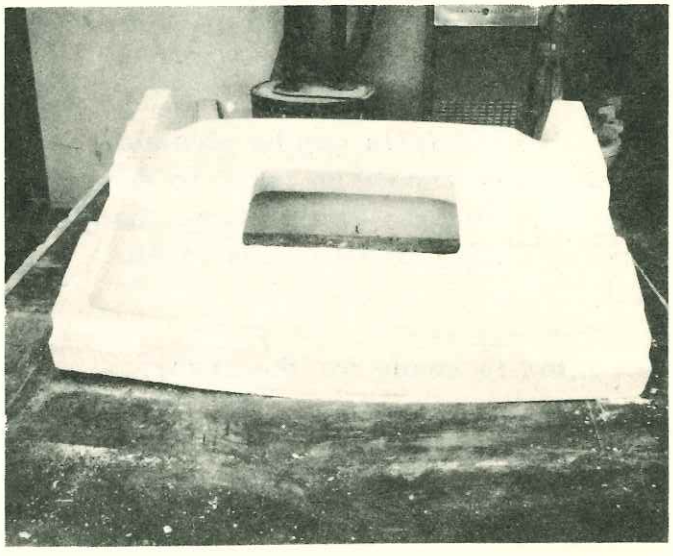
Again the final thickness will be established just before casing along with any special shape needed to support the piece while being cast or drained (photo #24).



If the piece is to be made with a face setter, that setter is blocked before the lump or core. To block the face setter, the seat mold would have to be blocked just before it. The first steps in blocking the core are used here. That is, locating notchettes on the parting line to keep the molds from shifting. Sets are needed to block the face setter, but not as many as are to block the seat setter. First pour a set around the front and sides 3/4" thick. This is for clearance when the setter is put on the seat (photo #25). An additional set is poured to give 1" clearance for the lavatory back splash.

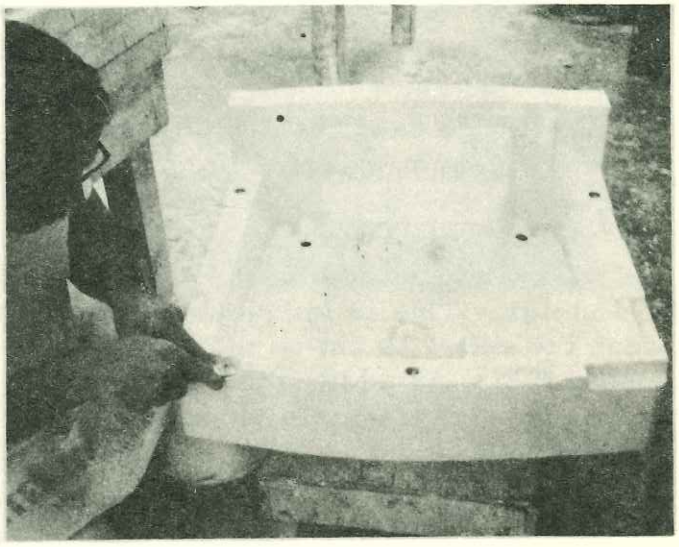


Another set is poured to fill in the basin so the model will be flat from side to side. Don't fill the basin with plaster. Use paper in the bottom to hold up mud so that the set is only 1/2" to 3/4" thick.



If the lavatory has soap dishes or other indentations they should be filled in before blocking or removed from the setter after blocking (photo #26).

The mold is now complete and can be taken apart. Sharp wedges are driven into the parting line being careful not to drive them into any of the notchettes.



The core as a rule will come out of the model first. It is removed and set aside. The next piece will be the lump. When it is removed, place it in its spot on the core. The model can be removed from the seat mold by drilling two 1/4" holes--one in each top side of the model and into the block mold by 1/4" or less. This can be accomplished by measuring the model thickness and putting a stop on the drill bit. If the hole goes through the model and block, you would not have air pressure to blow the model out.

Now all mold parts can be cleaned. Special care should be taken to keep all seams sharp. At this time, hand holes are cut into all molds (photo #27).

The mold is ready for the dryer. When putting the mold in the dryer, make sure all parts are supported properly to avoid warpage.